

Work Order ID 50588

July 16, 2009 10:23:52 AM



Page 1

Item ID: D407-667-105TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 7/16/09 Start Qty: 1.00



Cust Item ID:

Required Date: 7/20/09 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: *07/16* Date:

Tooling:

Date:

Run Start



QC: Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D407-667-145	Rev C
--------------	-------

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8673 on both ends as per Folio FA249. 2-Turn first side as per Folio FA249 3- File transition lines smooth.

Q.M 09-07-2001

110

0.00



QC1- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

Q.M 09-07-2001

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA249. 2- File transition lines smooth. 3- Remove sand and plugs. 4-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-145. Inside of Cuff (Do not engrave on outside of tube)

Q.M 09-07-2001

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Item ID: D407-667-105TRN

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Item Name: Crosstube Turning Detail

Start Date: 7/16/09 Start Qty: 1.00



Cust Item ID:

Required Date: 7/20/09 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

G.m 09-07-2009

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

=> 8/9/2009

40 8

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

- AWA 9-7-20

Work Order ID 50588

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Page 3

Item ID: D407-667-105TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 7/16/09 Start Qty: 1.00



Cust Item ID:

Required Date: 7/20/09 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Am 09-07-20 ①

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in Kanban rack! Location: L.G.

Am 9-7-20 ①

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/07/21 JF
mf 09-07-20

Picklist Print

Page 1

July 16, 2009 10:23:52 AM

Work Order ID: 50588

Parent Item: D407-667-105TRNRevC

Parent Item Name: Crosstube Turning Detail

Comments:

Start Date: 7/16/09

Required Date: 7/20/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6010-115RevA		Manufactured	No			110	Each	57.0000	1.0000			



Crosstube Material



a.m 08-07-20

<u>Warehouse</u> <u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
Main Warehouse		
LG	57	
26424	5	
32308	7	
38343	45	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: B 50588
Description: Crosstube Assembly		Part Number: D407-667-145
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.240	/			
	1.865	+0.005/-0.000	1.868	/			
	1.878	+0.005/-0.000	1.881	/			
	1.970	+0.005/-0.000	1.970	/			
	2.030	+0.005/-0.000	2.030	/			
	2.165	+0.005/-0.000	2.170	/			
	0.125	+/-0.010	0.125	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	R0.063	+/-0.010	R0.063	/			
SIDE B	4.438	+/-0.010	4.438	/			
	2.240	+0.005/-0.000	2.240	/			
	1.865	+0.005/-0.000	1.868	/			
	1.878	+0.005/-0.000	1.881	/			
	1.970	+0.005/-0.000	1.970	/			
	2.030	+0.005/-0.000	2.030	/			
	2.165	+0.005/-0.000	2.170	/			
	0.125	+/-0.010	0.125	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	R0.063	+/-0.010	R0.063	/			
	4.438	+/-0.010	4.438	/			
	113.20	+/-0.020	113.200	/			

Measured by: Q.M	Audited by: S	Prototype Approval:	N/A
Date: 09.07.20	Date: 09/07/20	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ	

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

C209107116
W10: 50588

RELEASED
08/11/12

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2855-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D407-667-145	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

8

7

6

5

4

3

2

1

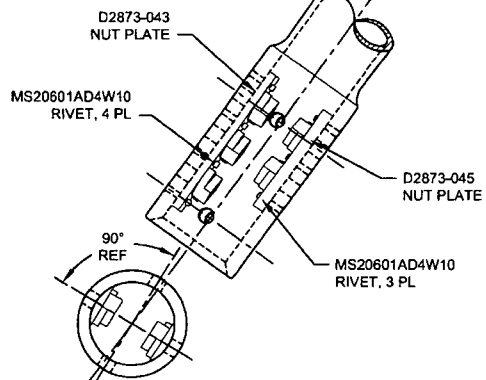
12 D2891-1 SUPPORT
2 PL

15 MS21920-20 CLAMP
4 PL

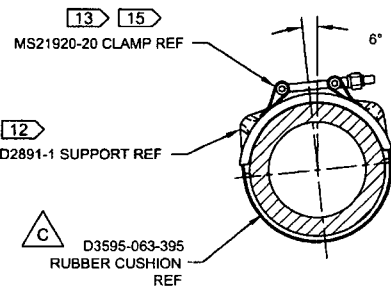
13 D3595-063-395
RUBBER CUSHION
4 PL. (UNDER CLAMP)

D407-667-505

**D407-667-145
ASSEMBLY DETAIL**
(VIEW LOOKING FWD)



VIEW A-A:
C7-2 **CUFF DETAIL**
SCALE 4X



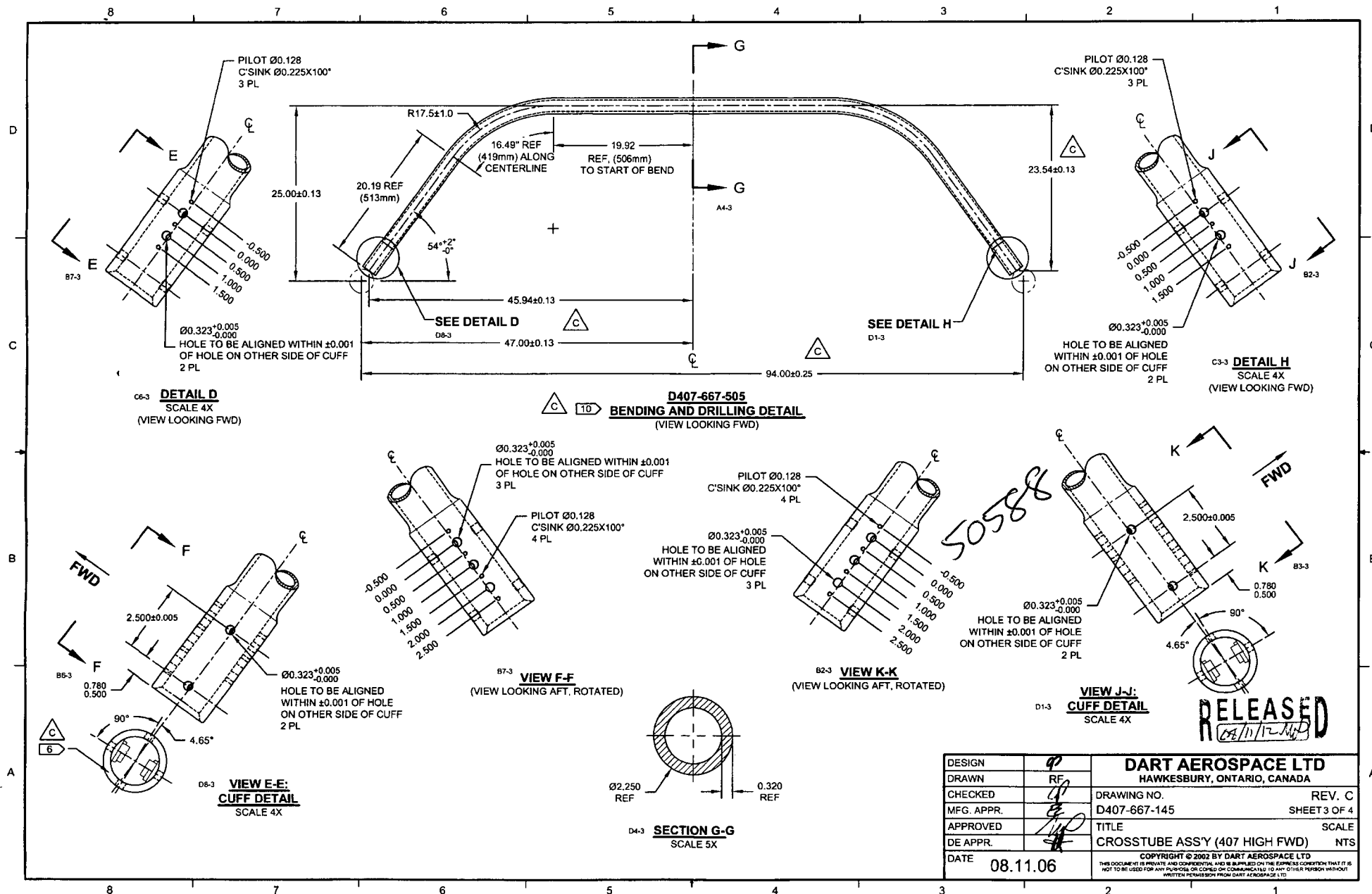
SECTION B-B
D5-2 **SCALE 5X**

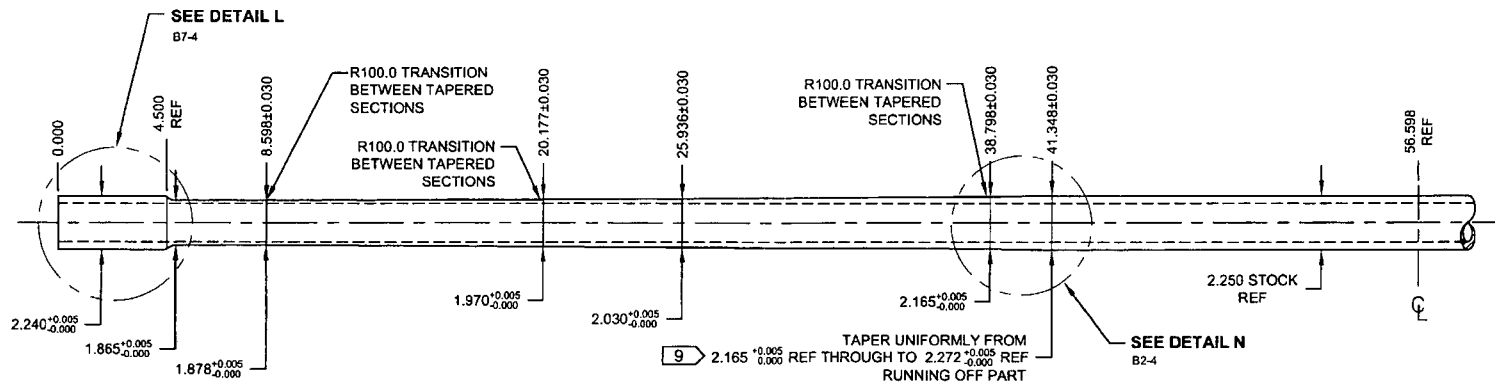
DESIGN	97
DRAWN	RF
CHECKED	CP
MFG. APPR.	CP
APPROVED	CP
DE APPR.	CP
DATE	08.11.06

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D407-667-145	REV. C SHEET 2 OF 4
TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	SCALE NTS
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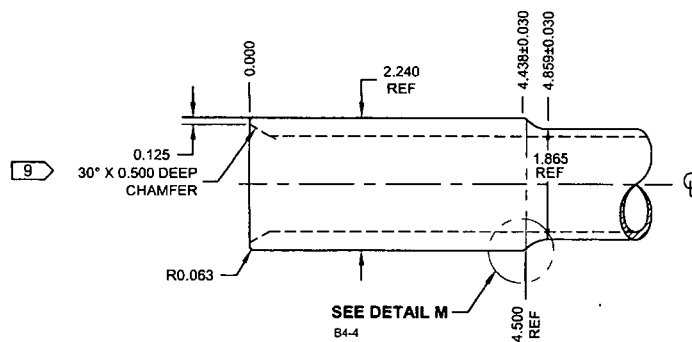
RELEASE
08/11/06

50588

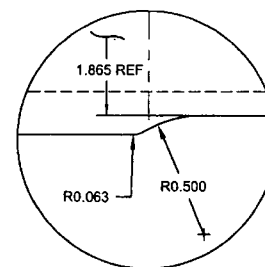




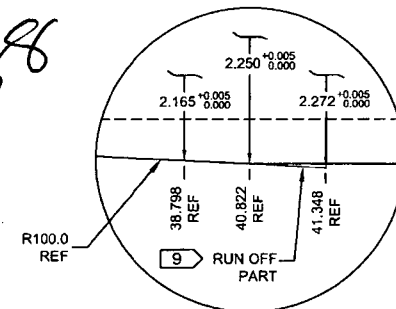
C TURNING DETAIL



**DETAIL L:
CROSSTUBE CUFF**
NOT TO SCALE



**DETAIL M:
CUFF TRANSITION**
NOT TO SCALE



**DETAIL N:
TAPER RUN-OFF**
NOT TO SCALE

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO. D407-667-145	REV. C
MFG. APPR.	CP		SHEET 4 OF 4
APPROVED	CP	TITLE	SCALE
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